

**2012 REGULAR SESSION
ACTUARIAL NOTE**

<p>HB 61 (SB 53) Author: Rep. Pearson and Sen. Guillory</p> <p>Date: April 12, 2012</p> <p>Organizations Affected: Louisiana state retirement systems</p>	<p>The actuarial computations presented in this note were prepared by Buck Consultants, LLC. Other content was supplied by the Louisiana Division of Administration.</p>
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Bill Header: RETIREMENT/STATE SYSTEMS: Relative to the Louisiana State Employees Retirement System and the Teachers Retirement System of Louisiana, makes changes to benefits for certain persons hired on or after January 1, 2013.

Cost Summary:

Actuarial Cost/(Savings) to Retirement Systems and OGB	Actuarial Savings, See Actuarial Analysis Below
Total Five Year Fiscal Cost	
Expenditures	(\$52,473,012)
Revenues	(\$0)

Estimated Actuarial Impact:

The chart below shows the estimated increase/(decrease) in the expected levels of contributions attributable to the proposed legislation. Note: it includes the present value cost of fiscal costs associated with benefit changes. It does **not** include present value costs associated with other fiscal concerns.

Actuarial Cost (Savings) to:	<u>Increase (Decrease) in The Actuarial Present Value</u>
All Louisiana public retirement systems	See Actuarial Analysis Below
Other post-retirement benefits	\$0
Total	See Actuarial Analysis Below

Estimated Fiscal Impact:

Five-year impact – expected reduction of annual state contributions to LASERS and TRSL if enacted:

	2012-2013	2013-2014	2014-2015	2015-2016	2015-2016
LASERS	\$0	\$9,832,963	\$10,233,863	\$11,711,233	\$14,692,689
TRSL	\$0	\$957,958	\$825,466	\$1,633,347	\$2,585,493

Longer-term savings – expected reduction of cumulative state contributions (in \$ million) to LASERS and TRSL if enacted:

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
LASERS	\$31.1	\$113.7	\$324.3	\$761.6	\$1,386.7	\$2,049.7	\$2,879.3
TRSL	\$1.9	\$22.9	\$94.9	\$231.4	\$429.7	\$680.4	\$943.8

Five-year impact – state contributions as a percentage of payroll to LASERS and TRSL if enacted:

	2012-2013	2013-2014	2014-2015	2015-2016	2015-2016
LASERS	28.2%	31.4%	30.0%	28.4%	28.6%
TRSL	26.5%	28.1%	28.8%	29.1%	29.4%

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Bill Information:

Current Law

Current law provides for the following state retirement systems:

- Louisiana State Employees' Retirement System (LASERS)
- Teachers' Retirement System of Louisiana (TRSL)
- Louisiana School Employees' Retirement System (LSERS)
- State Police Pension and Retirement System (STPOL)

A brief summary of the plans within each state system is given below:

LASERS

LASERS has many different plans that apply to future employees of the state. Some of the plans are for non-hazardous duty personnel and other are for those employed in hazardous professions. Each plan contains unique design features. The major structures are identified below.

Non Hazardous Duty Plans		Active Members
	Rank and File Employees	53,637
	Judicial Personnel	333
	Legislative Personnel	18
	Governor and Lieutenant Governor	2
	Clerk of House, Secretary of Senate	2
	Sergeants at Arms House & Senate	2
Hazardous Duty Plans		Active Members
	Wildlife	223
	Corrections Officers	5,216
	Crescent City Bridge Police	Unknown
	Alcohol Tobacco Control	48
	Peace Officers	114

TRSL

There are three plans within TRSL. These plans are all considered to be non-hazardous duty plans.

Non Hazardous Duty Plans		Active Members
	Regular Teachers	82,316
	Lunch Plan A Workers	144
	Lunch Plan B Workers	1,259

LSERS

There is only one plan structure in LSERS applicable to future new hires. This plan is a non hazardous duty plan. There are 12,589 active members in the plan.

STPOL

There is only one plan structure within STPOL applicable to new hires. This plan is a hazardous duty plan. There are 1,081 active members in the plan.

Proposed Law

For non-hazardous duty employees hired on or after January 1, 2013, who would be covered by LASERS and higher-education employees hired on or after January 1, 2013, who would be covered by TRSL, HB 61 (SB 53) will provide coverage under a cash-balance plan instead of the current final-average-pay-based plans.

Current employees will also be eligible to voluntarily move to the cash-balance plan.

Under the cash-balance plan, participating employees will continue to contribute 8 percent of pay. Employees will receive an annual pay credit of 12 percent and an annual interest credit set equal to the system's actuarial return on assets, less 1 percent.

Taxpayers bear less risk because the 1 percent is held by the system as a buffer against market losses and the benefit is tied to market returns. Because the expected level of future interest credits are set at a level that is one percent below the anticipated annual rate of return on assets, the annual 4% addition to the account balance provided at retirement may be financed with a contribution of less than 4% of pay.

Employees are protected against market downturns because they receive an investment account which can never lose value.

The cash-balance benefits are also more portable. After five years in the plan, an employee can roll over the entire account balance upon termination of employment. Employees also have the option of converting the account balance into a lifetime annuity starting at age 60. A lifetime annuity is a retirement benefit that cannot be outlived.

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Cost Analysis

Analysis of Actuarial Costs

Retirement Systems

No unfunded accrued liabilities will be created by the enactment of HB 61 (SB 53). The provisions of this bill apply only to state employees who will be hired in the future.

Because the effect on state contributions of implementation of the new arrangement will vary according to the return on retirement system investments, we have modeled the effects of the proposed change on state contributions to the retirement systems in a stochastic manner, using assumptions set forth on subsequent pages about future returns on assets held by the retirement systems to project the range of possible state contributions to the two affected retirement systems with and without the proposed changes. The results are shown below:

Projected Accumulated State Contributions (in \$ million) – Current LASERS Plan

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	\$5,224.6	\$10,297.4	\$16,144.3	\$23,112.3	\$30,409.4	\$38,451.8	\$47,879.5
75th percentile	\$4,800.6	\$9,066.6	\$14,018.5	\$19,193.9	\$24,370.8	\$29,628.5	\$35,115.2
50th percentile	\$4,594.7	\$8,279.8	\$12,176.8	\$16,116.6	\$19,359.0	\$22,085.0	\$24,987.3
25th percentile	\$4,435.8	\$7,572.2	\$10,539.9	\$13,092.0	\$14,987.8	\$17,143.8	\$19,418.4
5th percentile	\$4,238.6	\$6,757.9	\$8,454.8	\$9,930.3	\$11,563.0	\$13,492.1	\$15,592.2

Projected Accumulated State Contributions (in \$ million) – Cash Balance Plan for New LASERS Entrants

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	\$5,192.1	\$10,190.5	\$15,795.9	\$22,432.3	\$28,626.9	\$35,759.5	\$43,131.1
75th percentile	\$4,768.5	\$8,960.3	\$13,675.9	\$18,434.7	\$22,918.6	\$27,141.9	\$31,201.9
50th percentile	\$4,568.0	\$8,177.8	\$11,852.0	\$15,266.1	\$18,051.2	\$20,248.3	\$22,137.0
25th percentile	\$4,405.8	\$7,433.8	\$10,092.0	\$12,307.7	\$13,767.7	\$15,207.1	\$16,756.9
5th percentile	\$4,192.6	\$6,520.2	\$7,902.1	\$9,024.9	\$10,230.4	\$11,632.7	\$12,941.5

Projected Savings in Accumulated State Contributions (in \$ million) – LASERS

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	\$63.9	\$290.5	\$700.6	\$1,306.0	\$2,240.4	\$3,758.5	\$6,037.6
75th percentile	\$35.2	\$141.4	\$410.7	\$934.4	\$1,675.7	\$2,730.7	\$4,199.1
50th percentile	\$31.1	\$113.7	\$324.3	\$761.6	\$1,386.7	\$2,049.7	\$2,879.3
25th percentile	\$22.7	\$94.5	\$266.9	\$635.2	\$1,083.9	\$1,465.1	\$2,079.2
5th percentile	\$7.3	\$63.9	\$209.0	\$445.9	\$696.9	\$869.7	\$1,090.2

Projected Accumulated State Contributions (in \$ million) – Current TRSL Plan

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	\$8,291.3	\$16,491.6	\$25,910.2	\$36,939.5	\$49,041.8	\$62,095.8	\$77,266.4
75th percentile	\$7,655.2	\$14,652.9	\$22,693.7	\$31,188.5	\$39,839.5	\$48,828.6	\$57,695.2
50th percentile	\$7,340.6	\$13,456.2	\$19,945.3	\$26,487.0	\$32,273.9	\$36,827.7	\$42,314.6
25th percentile	\$7,102.8	\$12,400.8	\$17,476.0	\$22,015.5	\$25,556.4	\$29,081.4	\$33,122.3
5th percentile	\$6,799.5	\$11,196.1	\$14,203.5	\$16,831.9	\$19,555.6	\$22,953.1	\$26,443.6

Projected Accumulated State Contributions (in \$ million) – Cash Balance Plan for New TRSL Entrants

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	\$8,285.7	\$16,455.8	\$25,824.7	\$36,819.0	\$48,620.4	\$61,398.4	\$76,097.4
75th percentile	\$7,652.5	\$14,641.3	\$22,618.9	\$31,029.1	\$39,372.0	\$48,093.3	\$56,676.1
50th percentile	\$7,346.6	\$13,463.3	\$19,894.8	\$26,203.7	\$31,702.2	\$36,373.2	\$40,676.5
25th percentile	\$7,111.8	\$12,376.9	\$17,272.1	\$21,628.5	\$24,858.4	\$28,377.4	\$32,371.7
5th percentile	\$6,787.0	\$11,050.4	\$13,867.3	\$16,354.2	\$19,116.8	\$22,365.8	\$25,792.1

Projected Savings in Accumulated State Contributions (in \$ million) – TRSL

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	\$38.9	\$244.8	\$630.0	\$976.3	\$1,336.3	\$1,749.8	\$2,147.9
75th percentile	\$6.0	\$42.7	\$215.6	\$469.4	\$694.1	\$973.2	\$1,309.8
50th percentile	\$1.9	\$22.9	\$94.9	\$231.4	\$429.7	\$680.4	\$943.8
25th percentile	(\$17.5)	(\$18.8)	\$19.5	\$99.6	\$232.6	\$386.3	\$559.8
5th percentile	(\$49.7)	(\$112.7)	(\$150.8)	(\$150.9)	(\$124.6)	(\$27.9)	\$71.4

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Projected Unfunded Accrued Liability (in \$ million) – Current LASERS Plan

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	9,819.76	11,706.79	13,058.74	14,812.39	16,418.19	18,292.90	21,987.50
75th percentile	7,877.17	8,711.04	9,107.96	9,350.48	9,148.14	8,686.69	7,618.99
50th percentile	6,792.55	6,768.84	5,922.62	4,341.37	2,162.17	(1,130.32)	(7,257.79)
25th percentile	5,859.96	4,624.84	2,197.95	(940.64)	(7,430.91)	(17,413.27)	(33,781.43)
5th percentile	4,773.32	1,744.70	(4,388.12)	(13,611.22)	(31,058.59)	(59,489.03)	(106,843.71)

Projected Unfunded Accrued Liability (in \$ million) – Cash Balance Plan for New LASERS Entrants

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	9,812.17	11,668.13	12,845.14	13,966.02	14,924.49	15,970.87	16,491.76
75th percentile	7,865.78	8,702.51	8,885.12	8,706.00	8,176.85	7,319.77	5,168.09
50th percentile	6,787.94	6,699.35	5,638.13	3,880.98	1,640.73	(1,645.40)	(8,540.82)
25th percentile	5,816.79	4,463.50	1,766.57	(1,687.06)	(7,659.09)	(16,987.09)	(32,209.28)
5th percentile	4,580.94	1,271.70	(5,598.92)	(14,976.32)	(31,364.30)	(58,000.14)	(100,179.37)

Projected Reduction in Unfunded Accrued Liability (in \$ million) – LASERS

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	281.90	661.54	1,142.89	1,607.41	2,248.61	3,363.33	6,263.38
75th percentile	11.23	205.18	554.46	928.09	1,380.91	1,735.71	3,335.08
50th percentile	5.65	44.48	315.66	629.61	813.04	520.37	1,115.60
25th percentile	0.46	(6.81)	173.82	377.79	176.95	(1,033.87)	(1,855.32)
5th percentile	(6.87)	(62.61)	26.24	(20.36)	(904.71)	(3,882.28)	(7,913.00)

Projected Unfunded Accrued Liability (in \$ million) – Current TRSL Plan

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	16,121.49	18,732.23	20,664.66	23,291.25	25,728.07	28,695.90	34,393.14
75th percentile	13,205.63	14,326.12	14,765.02	15,003.33	14,673.05	13,741.37	11,854.76
50th percentile	11,586.92	11,408.06	10,082.16	7,639.01	4,068.29	(1,128.25)	(11,806.16)
25th percentile	10,178.06	8,229.86	4,648.30	(511.93)	(9,856.34)	(25,659.05)	(51,489.71)
5th percentile	8,593.08	4,067.39	(5,112.34)	(17,790.99)	(43,392.69)	(86,234.69)	(157,456.31)

Projected Unfunded Accrued Liability (in \$ million) – Cash Balance Plan for New TRSL Entrants

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	16,121.75	18,714.33	20,586.94	23,208.80	25,356.56	28,262.69	33,543.00
75th percentile	13,204.52	14,318.05	14,629.42	14,839.91	14,464.34	13,176.88	11,209.49
50th percentile	11,588.07	11,362.06	9,818.55	7,343.69	3,785.74	(2,089.33)	(11,883.53)
25th percentile	10,123.87	7,988.92	4,061.91	(1,115.92)	(10,903.89)	(26,415.30)	(51,672.03)
5th percentile	8,260.49	3,268.27	(6,469.96)	(20,631.12)	(45,532.99)	(89,294.08)	(159,711.36)

Projected Reduction in Unfunded Accrued Liability (in \$ million) – TRSL

	FY2016	FY2020	FY2024	FY2028	FY2032	FY2036	FY2040
95th percentile	411.23	1,078.83	1,677.69	2,328.14	2,793.23	3,409.25	4,683.01
75th percentile	1.34	327.14	691.32	886.09	946.17	999.61	1,192.39
50th percentile	(0.08)	13.66	225.44	386.58	474.30	540.08	687.52
25th percentile	(1.75)	(6.71)	11.70	108.74	233.76	287.10	282.67
5th percentile	(7.73)	(74.32)	(142.11)	(166.83)	(73.07)	(150.90)	(725.48)

Other Post Retirement Benefits

There are no actuarial costs or savings associated with HB 61 (SB 53) for other post employment benefits.

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Based on the stochastic modeling performed, the following conclusions can be drawn:

With respect to LASERS:

1. The 12% of pay cash balance benefit formula crediting the portfolio return less 1% results in a benefit reduction of 15%-35% for a new member (using an 8.25% rate of return; exact result depends on member demographic characteristics) relative to the current LASERS plan.
2. Examples of likely benefits under the new plan and the current plan at three different pay levels are shown below:

Estimated Annual Benefit Amounts	Low pay at \$ 30,000			Average pay at \$ 50,000			High pay at \$ 75,000		
	Short service at 10 years	Medium service at 20 years	Long service at 30 years	Short service at 10 years	Medium service at 20 years	Long service at 30 years	Short service at 10 years	Medium service at 20 years	Long service at 30 years
Estimated pay at retirement	\$ 57,652	\$ 92,572	\$ 141,575	\$ 98,088	\$ 154,289	\$ 235,900	\$ 144,132	\$ 231,431	\$ 353,939
Current Plan									
- DB plan benefit	\$ 12,671	\$ 42,468	\$ 97,780	\$ 21,452	\$ 70,781	\$ 162,987	\$ 32,178	\$ 108,170	\$ 244,450
- Total current plan	\$ 12,671	\$ 42,468	\$ 97,780	\$ 21,452	\$ 70,781	\$ 162,987	\$ 32,178	\$ 108,170	\$ 244,450
- Total current plan replacement income	22%	46%	69%	22%	46%	69%	22%	46%	69%
12% Cash Balance									
- 12% Cash Balance	\$ 8,192	\$ 30,774	\$ 84,169	\$ 13,653	\$ 51,291	\$ 140,282	\$ 20,480	\$ 76,936	\$ 210,423
- Total plan benefit	\$ 8,192	\$ 30,774	\$ 84,169	\$ 13,653	\$ 51,291	\$ 140,282	\$ 20,480	\$ 76,936	\$ 210,423
- Total plan replacement income	14%	33%	59%	14%	33%	59%	14%	33%	59%

3. Cost savings were analyzed over numerous potential economic and capital market environments, and there was a consistent pattern of reduction of projected contributions. The comments that follow apply across the various environments.
4. The 30-year reduction in accumulated contributions *for new members only* is likely in the range of 24%-35%. Factors that affect the ultimate savings are:
 - a. Actual new entrant demographics
 - b. Portfolio returns. Higher portfolio returns increase the cash balance plan costs due to higher cash balance account crediting rates, while lower cash balance returns lead to lower interest credits
5. The 30-year reduction in retirement system volatility attributable to *new members only* is approximately 40%
6. The 30-year reduction in accumulated contributions for LASERS in total (i.e., member and state contributions) is 4%-10%.
7. The projected reduction in retirement system volatility for LASERS in total at the end of 30 years is nearly 10%.

With respect to TRSL:

1. The 12% of pay cash balance benefit formula crediting the portfolio return less 1% results in a benefit reduction of 15%-35% for a new member (using an 8.25% rate of return; exact result depends on member demographic characteristics) relative to the current TRSL plan.
2. Examples of likely benefits under the new plan and the current plan at three different pay levels are shown below:

Estimated Annual Benefit Amounts	Low pay at \$ 30,000			Average pay at \$ 50,000			High pay at \$ 75,000		
	Short service at 10 years	Medium service at 20 years	Long service at 30 years	Short service at 10 years	Medium service at 20 years	Long service at 30 years	Short service at 10 years	Medium service at 20 years	Long service at 30 years
Estimated pay at retirement	\$ 57,652	\$ 92,572	\$ 141,575	\$ 98,088	\$ 154,289	\$ 235,900	\$ 144,132	\$ 231,431	\$ 353,939
Current Plan									
- DB plan benefit	\$ 13,613	\$ 44,322	\$ 101,864	\$ 22,688	\$ 73,870	\$ 169,774	\$ 34,032	\$ 110,804	\$ 254,881
- Total current plan	\$ 13,613	\$ 44,322	\$ 101,864	\$ 22,688	\$ 73,870	\$ 169,774	\$ 34,032	\$ 110,804	\$ 254,881
- Total current plan replacement income	24%	48%	72%	24%	48%	72%	24%	48%	72%
12% Cash Balance									
- 12% Cash Balance	\$ 8,192	\$ 30,774	\$ 84,169	\$ 13,653	\$ 51,291	\$ 140,282	\$ 20,480	\$ 76,936	\$ 210,423
- Total plan benefit	\$ 8,192	\$ 30,774	\$ 84,169	\$ 13,653	\$ 51,291	\$ 140,282	\$ 20,480	\$ 76,936	\$ 210,423
- Total plan replacement income	14%	33%	59%	14%	33%	59%	14%	33%	59%

3. Cost savings were analyzed over numerous potential economic and capital market environments, and there was a consistent pattern of reduction of projected contributions. Savings are projected to result in over 50% of outcomes in the first 10 years, over 75% of outcomes in years 10-15 and over 95% of outcomes at the end of 30 years. The comments that follow apply across the various environments.
4. The 30-year reduction in accumulated contributions and volatility *for new members only* is expected to be in a range comparable to that found under LASERS.
5. The 30-year projected reduction in accumulated contributions for TRSL in total (i.e., member and state contributions) is up to 2%.
6. The projected reduction in retirement system volatility for TRSL in total at the end of 30 years is approximately 1%.

In evaluating these results, it is important to bear in mind that the changes proposed in the legislation covered by this fiscal note pertain only to the benefits of future new hires in certain categories of employment for which LASERS and TRSL provide retirement benefits. Proposals that would alter benefits for current members of LASERS and TRSL are the subject of a separate fiscal note.

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In assessing these outcomes, one should consider the reduction in volatility (year-to-year variability) of contributions as well as their absolute level, as both are relevant in assessing the effect of the proposals on the actuarial soundness of the systems. Reductions in volatility are achieved principally via the adjustment of benefits to reflect investment results, which is not a feature of traditional defined-benefit designs. While this adjustment limits the exposure of the state to investment-driven movement in contribution requirements, the protection afforded the state is limited by the fact that rates credited on cash balance accounts may not be negative even when rates of returns on assets are, and by the fact that rates of return in excess of expected levels will be shared with participants and not entirely used to abate the state's obligation to contribute. In particular, the sharing of very high rates of return on plan assets in determining interest credits account for the fact that the accumulated contribution savings are negative in some scenarios; in these scenarios, the cash-balance plan would actually be more generous in terms of benefits provided than the current plan.

An unfunded liability could result under the cash-balance plan if, for example, there were severe or sustained asset losses that could not be reflected in account balances due to the constraint that annual interest credits may not be less than zero.

Except as otherwise specified, the data, actuarial assumptions and methods used to prepare these projections are the same as those used in the 2011 actuarial valuations of LASERS and TRSL. The demographics of projected new entrants in the stochastic modeling were based on the characteristics of new entrants to the systems in recent years. The distribution of future returns on assets was projected in accordance with the attached table of capital market assumptions.

Dual Referral

Senate

☐ 13.5.1 \geq \$100,000 Annual Fiscal Cost

☐ 13.5.2 \geq \$100,000 Annual Tax or Fee Change

House

☐ 6.8(F) \geq \$100,000 Annual Fiscal Cost

☐ 6.8(G) \geq \$100,000 Tax or Fee Increase or a Net Fee Decrease